PrEP ENGAGEMENT AND PERSISTENCE AMONG HETEROSEXUAL MEN IN MALAWI: FINDINGS FROM HPTN 112

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Sarah E. Rutstein[1], Mathews Mukatipa[2], Laura Limarzi-Klyn[3], Jane Chen[3], Mark Marzinke[4], Yaw Agyei[4], Emily Voldal[5], Ting Ye[6], Dan Haines[5], erica hamilton[7], Yvonne Makala[2], Mina Hosseinipour[1,2], Irving Hoffman[1,2], Myron Cohen[1], Mitch Matoga[2]

[1]Department of Medicine, University of North Carolina, [2]UNC Project Malawi, Lilongwe; [3]Department of Health Behavior, University of North Carolina; [4]Johns Hopkins University; [5]Fred Hutchinson Cancer Center; [6]University of Washington; [7]Network and Collaborative Research Division, FHI 360

BACKGROUND

- Engaging heterosexual men in prevention-effective HIV pre-exposure prophylaxis (PrEP) use is critical to improve HIV prevention outcomes for men and women, but **little is known about how best to engage and retain heterosexual men on PrEP**
- Consistent with World Health Organization (WHO) recommendations, in Malawi, persons with a recent sexually transmitted infection (STI) and those involved in transactional sex are priority populations for PrEP
- STI clinics are a particularly important entry point for men vulnerable to HIV. In our preliminary work from 2022, most PrEP initiations at an urban STI clinic in Lilongwe, Malawi, were among men (460/835); but **only 2.4% of men initiating PrEP with an STI were persistent at 6 months**
- **Peer-delivered systems navigation** is a promising approach to address barriers in PrEP access and utilization, but has not been tested among men in Eastern and Southern Africa

METHODS

Study design: Type I effectiveness-implementation hybrid randomized trial, 2:1 systems navigation (SN) vs standard of care (SOC)

Study setting: STI clinic in Lilongwe, serving ~15,000 patients annually

Population: Men ≥ 15 years; initiating PrEP via Malawi PrEP services; sought STI services; self-identify as heterosexual reporting ≥1 female partner in 6 months prior to enrollment

SN intervention: Peer navigators integrated into STI clinic-based PrEP services. Intervention included counseling informed by motivational interviewing techniques, community tracing for missed PrEP visits, point-of-care STI testing alongside PrEP visits, and "restart kits" (PrEP pill-pack and HIV self-test) for persons who stopped PrEP

Study data sources: PrEP clinic records via electronic ScanForm Timeline follow-back, capturing 30-day recall at quarterly study visit

PrEP care: Provision of PrEP and all clinical decision making provided by Malawi Ministry of Health nurses per contemporary guidelines

Outcome: **PrEP persistence (primary)** through 26 weeks (**Table 1**); **Engagement:** attendance at PrEP visits after initiation

Table 1. Definition of PrEP persistence based on PrEP modality

Modality	Criteria for persistence
Daily oral	DBS sampled during target visit windows, and TFVDP concentrations always above protective threshold (900 fmol/punch)
Event-driven	DBS sampled and timeline follow-back (TLFB) assessed during target visit windows, and TFVDP concentrations and self-reported pill-taking consistent with protection for reported condomless sex acts
Injectable	On-time injections through period of interest
Mixed	Combination of the criteria above, considering the dates of modality switches

RESULTS

- We enrolled 200 men (133 SN, 67 SOC) between March and November 2024
- Most men initiated oral PrEP (TDF/FTC), either daily (n=155) or event-driven (n=13), while 16% initiated long-acting cabotegravir (CAB-LA) (n=32) (**Table 2**)
- Three participants had acute HIV infection at enrollment, defined as negative or discordant rapid antibody tests and detectable HIV-RNA
- Persistent PrEP use was rare (**Table 3**), with no meaningful difference observed between arms. Sensitivity analyses, which accounted for men stopping PrEP at the recommendation of PrEP nurses due to low risk, did not change these results

26-week PrEP persistence was extremely low (<10%) and there was no observed effect of peer-delivered systems navigation (SN). However, men randomized to SN were more likely to return for PrEP follow-up visits, with double the rate of PrEP care engagement out to 26 weeks

Table 2. Baseline participant characteristics

Characteristic at study baseline	SN (n = 133)	SOC (n = 67)
Age, years	28 (24,34)	26 (24,30)
Currently married	32% (43/133)	28% (19/67)
At least four sexual partners in past three months	27% (36/133)	16% (11/67)
Any male sex partner in past three months	1% (1/133)	2% (1/67)
Ever given money, goods, or favors for sex	74% (99/133)	69% (46/67)
Ever received money, goods, or favors for sex	8% (10/133)	9% (6/67)
PrEP modality		
Daily oral	79%(105/13)	75% (50/67)
Event-driven oral	6% (8/133)	8% (5/67)
CAB-LA	15% (20/133)	18% (12/67)
Any bacterial STI	52% (69/133)	52% (35/67)
Syphilis	5% (7/133)	3% (2/67)
Gonorrhea	44% (58/133)	45% (30/67)
Chlamydia	21% (28/133)	24% (16/67)

Shown are % (n) or median (IQR).

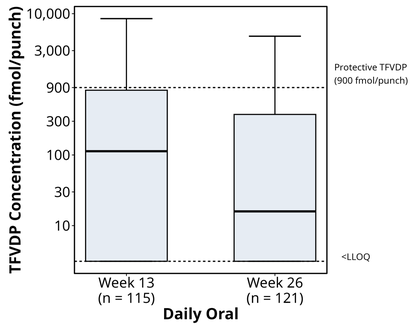


Figure 1. Tenofovir concentrations at Week 13 and Week 26 among those using daily oral PrEP and with study visit within allowable window. Tenofovir concentrations were measured from dried blood spots.

Table 3. Persistence on PrEP though Week 26

Outcome	Overall (n=195)	Systems navigator (n=129)	Standard of care (n=66)	Difference between arms* (95% CI)
Overall persistence	9% (17/195)	7% (9/129)	12% (8/66)	-5% (-14%, 4%)
Persistence by baseline PrEP modality choice				
Daily oral	7% (11/150)	6% (6/101)	10% (5/49)	-5% (-14%, 5%)
Event-driven	8% (1/13)	13% (1/8)	0% (0/5)	Insufficient data
Injectable	16% (5/32)	10% (2/20)	25% (3/12)	-16% (-45%,13%)

*SN vs. SOC, adjusted for baseline age and also baseline PrEP modality for overall persistence

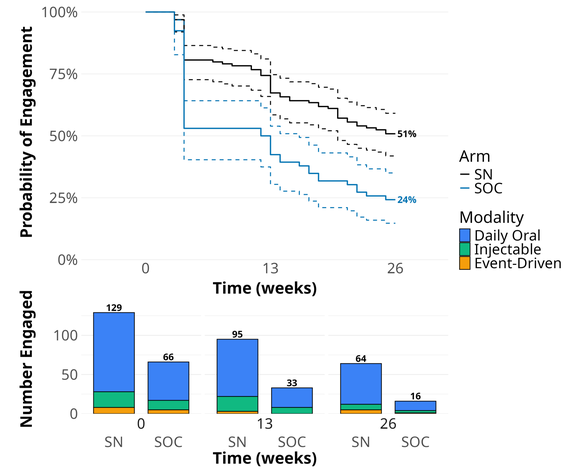


Figure 2. Engagement in PrEP visits by arm Men were considered lost from engagement when they missed a scheduled PrEP visit and never returned. PrEP modality is based on most recent selected among those still engaged in PrEP

- Engagement in PrEP care, characterized by any PrEP follow-up after PrEP initiation, was enhanced with SN (81% SN vs 53% SOC, difference of 28% [95% CI 13%, 43%]).
- 38% (57/150) of men starting daily oral PrEP had no TFV-DP at 13 or 26 weeks, (**Fig 1**) and 26% (10/38) of men initiating CAB-LA received only one injection
- A large drop-off in PrEP care occurred immediately after initiation (**Fig. 2**)

CONCLUSIONS

- Men from this STI setting exhibited substantial HIV vulnerability, three of 200 had acute HIV prior to PrEP start and half had a bacterial STI
- Despite limited persistence on PrEP, PrEP engagement was enhanced with SN.
- Our findings offer context on the potential of long- acting PrEP for this population, and the need for additional strategies to promote persistence.

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PLAIN LANGUAGE SUMMARY

Less than 10% of men who started HIV PrEP in an urban STI clinic in Lilongwe, Malawi, had evidence of continuous protective PrEP coverage through 26-weeks. Peer-delivered systems navigation, which included counseling and in-person tracing for missed PrEP visits, did not improve PrEP use, but did improve men's attendance in PrEP care

Study contact: srutstein@unc.edu